

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~striketrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND claims 1, 3-5, 7-11 and 13-21 in accordance with the following:

1. (currently amended) A magnet assembly comprising: first and second sets of coils for generating respective magnetic fields, wherein the coils are constructed and arranged such that under working conditions, a first homogeneous region can be generated within ~~the~~ an envelope defined by the magnet assembly and a second homogeneous region can be generated outside the envelope, the resultant magnetic field in each region being sufficiently homogeneous to enable a NMR process to be performed on an object in the region.
2. (original) An assembly according to claim 1, wherein the coils are operable to generate the first and second homogeneous regions simultaneously.
3. (currently amended) An assembly according to claim 1 ~~or claim 2~~, wherein the first set of coils define a solenoid.
4. (currently amended) An assembly according to ~~any of the preceding claims~~ claim 1, wherein the first set of coils are actively shielded.
5. (currently amended) An assembly according to ~~any of the preceding claims~~ claim 2, wherein the second set of coils are nested.
6. (original) An assembly according to claim 5, wherein the nested coils are substantially coplanar.
7. (currently amended) An assembly according to claim 5 ~~or claim 6~~, wherein at least two of the coils of the second set are arranged to carry working currents in opposite senses.

8. (currently amended) An assembly according to ~~any of claims 5 to 7~~ claim 5, wherein the second set of coils comprises at least two pairs of coils.
9. (currently amended) An assembly according to claim 8, ~~when dependent on claim 2~~, wherein in the first homogeneous region each pair of coils generates a substantially zero first order magnetic field gradient and substantially equal second order magnetic field gradients of opposite senses.
10. (currently amended) An assembly according to ~~any of the preceding claims~~ claim 1, wherein the first set of coils is superconductive.
11. (currently amended) An assembly according to ~~any of the preceding claims~~ claim 10, wherein the second set of coils is superconductive.
12. (original) An assembly according to claim 11, wherein the second set of coils are made from high temperature superconductor.
13. (currently amended) An assembly according to claim 11 ~~or claim 12~~, wherein the second set of coils are located within a cryostat.
14. (currently amended) An assembly according to claim 13, ~~when dependent on claim 10~~, wherein the first and second sets of coils are located within the same cryostat.
15. (currently amended) An assembly according to ~~any of claims 1 to 13~~ claim 1, wherein the second set of coils are self-contained so that ~~they~~ the second set of coil can be separated from the first set of coils without compromising the operational integrity of the first set of coils.
16. (currently amended) An assembly according to ~~any of the preceding claims~~ claim 1, wherein the second homogeneous region is substantially spherical.
17. (currently amended) An assembly according to ~~any of claims 1 to 15~~ claim 1, wherein the second homogeneous region is substantially disk shaped and has a magnetic field gradient in the axial direction.

18. (currently amended) An assembly according to ~~any of the preceding claims~~ claim 1, wherein the first homogeneous region is located within the first set of coils.

19. (currently amended) An assembly according to ~~any of the preceding claims~~ claim 1, wherein the magnetic field strength of each homogeneous region varies by no more than 100ppm.

20. (currently amended) An assembly according to ~~any of the preceding claims~~ claim 1, further comprising a power supply coupled to the coils so as continuously to energise the coils.

21. (currently amended) An assembly according to ~~any of the preceding claims~~ claim 1, further comprising an additional set of second coils located adjacent an opposite side of the first set of coils to the one set of second coils.